

SABIC® LLDPE 218BJ

LINEAR LOW DENSITY POLYETHYLENE

DESCRIPTION

SABIC® LLDPE 218BJ is a butene linear low density polyethylene resin with an additive package typically designed for a broader range of food applications (TNPP free). The good thermal stability allows to use the resin in critical extrusion processing conditions. Films produced from SABIC® LLDPE 218BJ have better draw-down ability compared to lower MFR LLDPE resins. This product is not intended for and must not be used in any pharmaceutical/medical applications.

TYPICAL APPLICATIONS

SABIC® LLDPE 218BJ is typically used for food applications (lamination film, barrier film), melt embossed films, but can also be used in industrial packaging such as cling film and stretch film for manual and pallet wrap. It can also be used as a blending partner with other SABIC® PE resins in general-purpose blown and cast film applications.

TYPICAL PROPERTY VALUES

Melet Flow Rate (MFR) 2.0 dg/min ISO 1133 Density 918 kg/m² ASTM DEOS TORISTORY Melet Flow Rate (MFR) TORISTORY Melet Flow Rate (MFR) TORISTORY Melet Flow Rate (MFR) TORISTORY Melet All DEAS (MERCAL) Melet All DEAS (MERCAL) TORISTORY Series at yield 12 MPa ASTM DE38 Series at yield 6 ASTM DE38 ASTM DE38 Series at yield 16 40 ASTM DE38 ASTM DE38 Series at yield 16 40 ASTM DE38 ASTM DE38 ASTM DE38 Series at yield 16 40 ASTM DE38 ASTM D	PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
at 190 °C and 2.16 kg 2.0 dg/min NSTM D1505 Density 918 kg/m² ASTM D1505 DSC Temelting point 122 °C SABIC method MECHANICA PROPERTIES WEEKER STATE AND LAND LAND LAND LAND LAND LAND LAND	POLYMER PROPERTIES			
Desirity 918 kg/m² ASTM D1505 DSC Temelity point 122 °C SABIC method MECHANCIA PROPERTIES Temsile test Temsile test Stress at break 17 MPa ASTM D638 ASTM D638 Stress at break 16 % ASTM D638 Stress at break 90 % ASTM D638 Stress at break 8 ASTM D638 Stress at break 16 % ASTM D638 Stress at break 16 % ASTM D638 Stress at break 8 ASTM D638 ASTM D638 Stress at break 8 ASTM D638 ASTM D638 Stress foregation 9 ASTM D6457 ASTM D6459 Stress foregation 8 ASTM D6459 AST	Melt Flow Rate (MFR)			
DOSC Recompleted by the properties of the part of the properties of the part of	at 190 °C and 2.16 kg	2.0	dg/min	ISO 1133
MECHANICAL PROPERTIES C SABIC method MECHANICAL PROPERTIES Stress at break 17 MPa ASTM D638 Stress at break 12 MPa ASTM D638 Stress at break 16 % ASTM D638 Strain at break 790 % ASTM D638 Strain at break 490 % ASTM D790 Hebural test W ASTM D790 Hebural test W ASTM D790 Hebural test W ASTM D790 Hebural test % ASTM D790 Hebural test W ASTM D790 Hebural test W ASTM D790 Hebural test strength To 92 % ASTM D457 Haze 12 M M ASTM D5457 Haze M M ASTM D5458-95 ASTM D5458-95 Haze strength To R M M M M M M M M M M M M M M <	Density	918	kg/m³	ASTM D1505
### CHANICAL PROPERTIES Tensile test	DSC			
Tensile test Free State Break 17 MPa ASTM D638 stress at break 12 MPa ASTM D638 stress at yield 16 % ASTM D638 strain at yield 790 % ASTM D638 Flexural test ************************************	melting point	122	°C	SABIC method
stress at break 17 MPa ASTM D638 stress at yield 12 MPa ASTM D638 strain at yield 16 % ASTM D638 strain at break 790 % ASTM D638 Flexural test Usecant modulus at 1% elongation 254 MPa ASTM D790 Hardenes Shore D 48 - 150 868 OPTICAL PROPERTIES (*) Lag MPa ASTM D2457 HARZE ASTM D2457 HARZE ASTM D2457 HARZE MI D003 MSO 7765-2 Data impact 2.8 M/m ISO 6383-2 Data impact MSO 7765-2 Reserve Stress retention Protrusion puncture resistance 2.2 M/m SO 7765-2 Elastic recovery & Stress retention 8 ASTM D5459-95 Stress retention 8 ASTM D5459-95 Stress retention 9 ASTM D5458-95 Protrusion pun	MECHANICAL PROPERTIES			
stress at yield 12 MPa ASTM D638 strain at yield 16 % ASTM D638 strain at break 790 % ASTM D638 Flexural test WPa ASTM D790 Hardness Shore D 48 - ISO 868 OPTICAL PROPERTIES (1) WPa ASTM D2457 Haze 1.2 % ASTM D1003 FLILLY PROPERTIES (1) XI/m ISO 7765-2 Tear strength TD 185 KN/m ISO 6383-2 Protrusion Puncture resistance 2.2 J ASTM D5748-95 Elastic recovery & Stress retention 8 ASTM D5459-95 Stress retention ASTM D5459-95 Protrusion Puncture resistance 52.6 % ASTM D5459-95 Stress retention ASTM D5459-95 Elastic recovery Stress retention % ASTM D5458-95 Poster Stress Poste	Tensile test			
Strain at yield 16 % ASTM D638 A	stress at break	17	MPa	ASTM D638
Strain at break 790 % ASTM D638 STM D6458-95 STM D64	stress at yield	12	MPa	ASTM D638
Flexural test Secant modulus at 1% elongation 254 MPa ASTM D790 Hardness Shore D 48 - ISO 868 OPTICAL PROPERTIES (1) ************************************	strain at yield	16	%	ASTM D638
Secant modulus at 1% elongation 254 MPa ASTM D790 Hardness Shore D 48 - ISO 868 OPTICAL PROPERTIES (1) Use (45°) 92 % ASTM D2457 Haze 1.2 % ASTM D1003 FILM PROPERTIES (1) Dart impact 2.8 kl/m ISO 7765-2 Tear strength TD 185 kN/m ISO 6383-2 Protrusion Puncture resistance 2.2 J ASTM D5748-95 Elastic recovery & Stress retention Elastic recovery & Stress retention % ASTM D5459-95 Stress retention % ASTM D5459-95 Stress retention % ASTM D5458-95 O% pre-stretch 0.06 N/mm ASTM D5458-95	strain at break	790	%	ASTM D638
Hardness Shore D OPTICAL PROPERTIES (1) Closs (45°) Page 1.2 Dart impact 2.8 Tear strength TD 185 2.2 Protrusion Puncture resistance 2.2 Protrusion Puncture resistance 3.2 Elastic recovery & Stress retention 4.0 Elastic recovery (2.6 Stress retention 4.0 Stress retention 5.0 Stress retention 5.0 Stress retention 6.0 Stress retention 7.0 Stress retention 7.0 Stress retention 8.0 Stress retention 8.0	Flexural test			
OPTICAL PROPERTIES (1) Gloss (45°) 92 % ASTM D2457 Haze 1.2 % ASTM D1003 FILM PROPERTIES (1) V V Dart impact 2.8 kl/m ISO 6383-2 Tear strength TD 185 kN/m ISO 6383-2 Protrusion Puncture resistance 2.2 J ASTM D5458-95 Elastic recovery & Stress retention % ASTM D5459-95 Stress retention 80 % ASTM D5458-95 Peel cling 0% pre-stretch 0.06 N/mm ASTM D5458-95 200% pre-stretch 0.05 N/mm ASTM D5458-95	Secant modulus at 1% elongation	254	MPa	ASTM D790
Gloss (45°) 92 % ASTM D2457 Haze 1.2 % ASTM D1003 FILM PROPERTIES (1) V V Dart impact 2.8 Kl /m ISO 7765-2 Tear strength TD 185 KN /m ISO 6383-2 Protrusion Puncture resistance 2.2 J ASTM D5748-95 Elastic recovery & Stress retention % ASTM D5459-95 Stress retention % ASTM D5459-95 Peel cling N/mm ASTM D5458-95 200% pre-stretch 0.06 N/mm ASTM D5458-95	Hardness Shore D	48	-	ISO 868
Haze	OPTICAL PROPERTIES (1)			
Protrusion Puncture resistance 2.8 kJ/m ISO 7765-2 Elastic recovery & Stress retention 2.6 % % ASTM D5459-95 Stress retention 80 % ASTM D5459-95 Pel cling O% pre-stretch 0.06 N/mm ASTM D5458-95 2.08 N/mm ASTM D5458-95 N/mm ASTM D5458-95	Gloss (45°)	92	‰	ASTM D2457
Dart impact 2.8 kJ/m ISO 7765-2 Tear strength TD 185 kN/m ISO 6383-2 Protrusion Puncture resistance 2.2 J ASTM D5748-95 Elastic recovery & Stress retention \$ ASTM D5459-95 Stress retention 80 % ASTM D5459-95 Peel cling 0% pre-stretch 0.06 N/mm ASTM D5458-95 200% pre-stretch 0.05 N/mm ASTM D5458-95	Haze	1.2	%	ASTM D1003
Tear strength TD 185 kN/m ISO 6383-2 Protrusion Puncture resistance 2.2 J ASTM D5748-95 Elastic recovery & Stress retention STR D5459-95 ASTM D5459-95 Stress retention 80 % ASTM D5459-95 Peel cling W/mm ASTM D5458-95 200% pre-stretch 0.06 N/mm ASTM D5458-95 200% pre-stretch 0.05 N/mm ASTM D5458-95	FILM PROPERTIES (1)			
Protrusion Puncture resistance 2.2 J ASTM D5748-95 Elastic recovery & Stress retention Elastic recovery & Stress retention 52.6 % ASTM D5459-95 Stress retention 80 % ASTM D5459-95 Peel cling 0% pre-stretch 0.06 N/mm ASTM D5458-95 200% pre-stretch 0.05 N/mm ASTM D5458-95	Dart impact	2.8	kJ/m	ISO 7765-2
Elastic recovery & Stress retention Elastic recovery 52.6 % ASTM D5459-95 Stress retention 80 % ASTM D5459-95 Peel cling 0% pre-stretch 0.06 N/mm ASTM D5458-95 200% pre-stretch 0.05 N/mm ASTM D5458-95	Tear strength TD	185	kN/m	ISO 6383-2
Elastic recovery 52.6 % ASTM D5459-95 Stress retention 80 % ASTM D5459-95 Peel cling 0% pre-stretch 0.06 N/mm ASTM D5458-95 200% pre-stretch 0.05 N/mm ASTM D5458-95	Protrusion Puncture resistance	2,2	J	ASTM D5748-95
Stress retention 80 % ASTM D5459-95 Peel cling 0% pre-stretch 0.06 N/mm ASTM D5458-95 200% pre-stretch 0.05 N/mm ASTM D5458-95	Elastic recovery & Stress retention			
Peel cling N/mm ASTM D5458-95 200% pre-stretch 0.05 N/mm ASTM D5458-95	Elastic recovery	52.6	%	ASTM D5459-95
0% pre-stretch 0.06 N/mm ASTM D5458-95 200% pre-stretch 0.05 N/mm ASTM D5458-95	Stress retention	80	%	ASTM D5459-95
200% pre-stretch 0.05 N/mm ASTM D5458-95	Peel cling			
,	0% pre-stretch	0.06	N/mm	ASTM D5458-95
THERMAL PROPERTIES	200% pre-stretch	0.05	N/mm	ASTM D5458-95
	THERMAL PROPERTIES			



PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Vicat Softening Temperature			
at 10 N (VST/A)	96	°C	ISO 306
HIGHLIGHT PROPERTIES			
Ultimate pre-stretch level	310	%	-
Retention force at 60 sec	0.97	kg	-
ELECTRICAL PROPERTIES			
Volume resistivity	5.0E15	$\Omega.\text{cm}$	ASTM D257
Dissipation factor at 60 Hz	1.0E3	-	ASTM D150
Dielectric constant at 60 Hz	2.17	-	ASTM D150
Dielectric strength at 500 V/sec	55	V/µm	ASTM D149

⁽¹⁾ Properties have been measured by producing 30 μm film with 2.5 BUR using 100% 218BJ.

PROCESSING CONDITIONS

Typical processing conditions for 218BJ are:

Melt temperature: 250 - 300°C Chill roll temperature: 20°C

ENVIRONMENT AND RECYCLING

The environmental aspects of any packaging material do not only imply waste issues but have to be considered in relation with the use of natural resources, the preservations of foodstuffs, etc. SABIC Europe considers polyethylene to be an environmentally efficient packaging material. Its low specific energy consumption and insignificant emissions to air and water designate polyethylene as the ecological alternative in comparison with the traditional packaging materials. Recycling of packaging materials is supported by SABIC Europe whenever ecological and social benefits are achieved and where a social infrastructure for selective collecting and sorting of packaging is fostered. Whenever 'thermal' recycling of packaging (i.e. incineration with energy recovery) is carried out, polyethylene -with its fairly simple molecular structure and low amount of additives- is considered to be a trouble-free fuel.

STORAGE AND HANDLING

Polyethylene resin should be stored in a manner to prevent a direct exposure to sunlight and/or heat. The storage area should also be dry and preferably do not exceed 50°C. SABIC would not give warranty to bad storage conditions, which may lead to quality deterioration such as color change, bad smell and inadequate product performance. It is advisable to process PE resin within 6 months after delivery.